OPERATIONS AND MAINTENACE ARCHITECTURE FOR MULTIPROTOCOL DISTRIBUTED SYSTEM

ABSTRACT OF THE DISCLOSURE

An architecture for providing operations and maintenance functionality in an open access wireless signal distribution system. The open access system makes use of a common, shared, distributed radio frequency distribution network and associated network entities that enable a system operator to offer access to wireless infrastructure that maybe shared among multiple wireless service providers (WSPs). The WSPs, or tenants of the operators, may obtain access in a tenant lease-space model. The open access system provides the ability for multiple tenants in a given community to share wireless equipment such as remotely located antenna sites, regardless of their specific requirements for radio frequency (RF) air interface signal protocols and/or management messaging formats. The present invention is directed to an open access Network Management System (NMS) that provides multiple tenants with an appropriate level of access and control over the system elements that carry their signaling. For example, in addition to forwarding messages from tenant-controlled NMSs to the open access system elements, the open access NMS preferably acts as a caching firewall to ensure that the tenant NMS are permitted privileges to access only those system elements to which they are a properly assigned. A database function included with the open access NMS may be used to build and maintain a database of operations and maintenance information from autonomously initiated poll and status functions. This then permits queries from tenant NMSs to be answered without the need to duplicate open system network traffic.